

## THAT WHICH IS CLAIMED:

1. A pharmaceutical composition comprising:
  - a) an ionogenic surfactant;
  - 5 b) a metal chelating complex comprising a metal and a monodentate, bidentate, or polydentate ligand that exhibits affinity for hydrogen ion;
  - c) a solvent; and,
  - d) a pharmaceutically acceptable carrier.
- 10 2. The pharmaceutical composition of claim 1, wherein said composition comprises by weight about 0.1-15% ionogenic surfactant, about 1-30% metal chelating complex, and about 0.5-95% solvent.
- 15 3. The pharmaceutical composition claim of 1, wherein said metal is selected from the group consisting of copper, zinc, mercury, chromium, manganese, nickel, cadmium, arsenic, cobalt, aluminum, lead, selenium, platinum, gold, titanium, tin, and combinations thereof.
- 20 4. The pharmaceutical composition of claim 1, wherein the monodentate, bidentate, or polydentate ligand is selected from the group consisting of anions of natural amino acids, iminodiacetic acids, nitriletriacetic acids, derivatives of iminodiacetic acids comprising a carbon-substitution in the  $\alpha$ -position to the carboxylic group and amino acid residue fragments containing no aminocarboxylic group, derivatives of nitriletriacetic acids comprising a carbon-substitution in the  $\alpha$ -  
25 position to the carboxylic group and amino acid residue fragments containing no aminocarboxylic group, alkylenediaminopolyacetic acid, derivatives of polyalkylenepolyaminopolyacetic acids comprising a carbon-substitution in the  $\alpha$ -  
30 position to the carboxylic group and amino acid residue fragments containing no aminocarboxylic group, derivatives of  $\omega$ -phosphoncarboxylic, derivatives of ethylenediphosphontetrapropionic acids, derivatives of ethylenetetra(thioacetic), derivatives of diethylenetrithiodiacetic acids, monoamine complexones in which carboxylic groups are replaced by phosphonic groups, and mixtures thereof.

5. The pharmaceutical composition of claim 1, wherein the metal chelating complex comprises at least one amino acid selected from the group consisting of isoleucine, phenylalanine, leucine, lysine, methionine, threonine, tryptophan, valine, alanine, glycine, arginine, and histidine.

6. The pharmaceutical composition of claim 1, wherein the metal chelating complex comprises a glycinatecopper halide complex.

7. The pharmaceutical composition of claim 1, wherein the metal chelating complex comprises an ethylenediaminetetraacetate zinc (Zn-EDTA) complex.

8. The pharmaceutical composition of claim 1, wherein the ionogenic surfactant is selected from the group consisting of cetylpyridinium halides, cetyltrimethylammonium halides, cetyldimethylethylammonium halides, cetyldimethylbenzylammonium halides, cetyltributylphosphonium halides, dodecyltrimethylammonium halides, and tetradecyltrimethylammonium halides.

9. The pharmaceutical composition of claim 8, wherein the ionogenic surfactant is selected from the group consisting of cetylpyridinium halogenides and cetyltrimethylammonium halogenides.

10. The pharmaceutical composition of claim 1, wherein the ionogenic surfactant is selected from the group consisting of cetylpyridinium chloride (CPC), cetyltrimethylammonium chloride, cetylbenzyltrimethylammonium chloride, cetylpyridinium bromide (CPB), cetyltrimethylammonium bromide (CTAB), cetyldimethylethylammonium bromide, cetyltributylphosphonium bromide, dodecyltrimethylammonium bromide, and tetradecyltrimethylammonium bromide.

11. The pharmaceutical composition of claim 10, wherein the ionogenic surfactant is CPC.

12. The pharmaceutical composition of claim 1, wherein said solvent is an aliphatic alcohol.

5 13. The pharmaceutical composition of claim 12, wherein said aliphatic alcohol is isopropanol.

14. A pharmaceutical composition comprising CPC, Zn-EDTA, isoproranol, and a pharmaceutically acceptable carrier.

10

15. The pharmaceutical composition of claim 14, wherein said composition comprises by weight about 0.2% CPC, about 1% Zn-EDTA, and about 9.8% isoproranol.

15 16. The pharmaceutical composition of claim 14, wherein said composition comprises by weight about 0.02% CPC, about 1% Zn-EDTA, and about 9.8% isoproranol.

20 17. The pharmaceutical composition of claim 14, wherein said composition comprises by weight about 0.002% CPC, about 1% Zn-EDTA, and about 9.8% isoproranol.

25 18. The pharmaceutical composition of claim 1 further comprising at least one additional pharmaceutical composition.

19. The pharmaceutical composition of claim 18, wherein said at least one additional pharmaceutical composition is an antimicrobial composition.

30 20. The pharmaceutical composition of claim 19, wherein said antimicrobial composition is an antifungal composition.

21. The pharmaceutical composition of claim 18, wherein said at least one additional pharmaceutical composition is selected from the group consisting of Zimycan®, Seboride®, Liarozole®, Rambazole®, Atopik®, Ketanserin®, and Oxatomide®.

5

22. The pharmaceutical composition as in any one of claims 1-21, wherein said pharmaceutical composition is formulated for topical administration.

23. The pharmaceutical composition as in any one of claims 1-21, wherein  
10 said pharmaceutical composition is formulated for oral administration.

24. The pharmaceutical composition as in any one of claims 1-21, wherein said pharmaceutical composition is formulated for intravenous administration.

15 25. A method for treating or preventing an infection caused by a pathogen in a subject, said method comprising administering to said subject an effective amount of the pharmaceutical composition according to any one of claims 1-24.

26. The method of claim 25, wherein said pathogen is selected from the  
20 group consisting of a bacterium, a virus, and a fungus.

27. The method of claim 26, wherein said pathogen is a bacterium.

28. The method of claim 27, wherein said bacterium is selected from the  
25 group consisting of *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Staphylococcus pyogenes*, *Staphylococcus pneumoniae*, *Staphylococcus epidermidis*, *Nesseria gonorrhoeae*, *Nesseria meningitidis*, *Bacillus anthracis*, *Bacillus cereus*, *Bacillus subtilis*, *Propionibacterium granulosum*, and *Propionibacterium acne*.

30

29. The method of claim 26, wherein said pathogen is a virus.

30. The method of claim 29, wherein said virus is selected from the group consisting of a herpes virus, a picornavirus, a rhinovirus, human immunodeficiency virus (HIV), hepatitis A virus, hepatitis B virus, human T-cell lymphotropic virus type I (HTLV-I), an influenza virus, an arenavirus, an arbovirus, varicella-zoster virus, and  
5 variola virus.

31. The method of claim 29, wherein said infection is selected from the group consisting of smallpox, influenza, measles, mumps, polio, chickenpox, rabies, German measles, hepatitis A, hepatitis B, herpes, shingles, Epstein-Barr, and HIV  
10 infection.

32. The method of claim 26, wherein said pathogen is a fungus.

33. The method of claim 32, wherein said fungus is a dermatophyte.  
15

34. The method of claim 33, wherein said infection is dermatophytosis.

35. The method of claim 34, wherein said dermatophytosis is selected from the group consisting of ringworm, kerion, mycotic sycosis, onychomycosis, athlete's foot, jock itch, disseminated dermatophytosis, and granulomatous  
20 dermatophytosis.

36. The method of claim 32, wherein said fungus is selected from the group consisting of *Trichophyton rubrum*, *Pityrosporum ovale*, and *Candida albicans*.  
25

37. A method for treating or preventing dandruff in a subject comprising administering to said subject an effective amount of the pharmaceutical composition according to any one of claims 1-24.

30 38. A method for treating or preventing acne in a subject comprising administering to said subject an effective amount of the pharmaceutical composition according to any one of claims 1-24.

39. A method for treating dermatitis in a subject comprising administering to said subject an effective amount of the pharmaceutical composition according to any one of claims 1-24.

5           40. The method of claim 39, wherein said dermatitis is atopic or contact dermatitis.

          41. The method of claim 25 further comprising administration of at least one additional pharmaceutical composition.

10

          42. The method of claim 41, wherein said at least one additional pharmaceutical composition is an antimicrobial composition.

          43. The method of claim 42, wherein said antimicrobial composition is an  
15 antifungal composition.

          44. The method of claim 42, wherein said antimicrobial composition is selected from the group consisting of Lamisil®, Zimycan®, Seboride®, Sporamelt®, Liarozole®, Rambazole®, and Azoline®.

20

          45. The method of claim 41, wherein said at least one additional pharmaceutical composition is Hivenyl®, Atopik®, Ketanserin®, Oxatomide®, or Ecalcidene®.

25           46. The method according to any one of claims 22-45, wherein said pharmaceutical composition is administered orally.

          47. The method according to any one of claims 22-45, wherein said pharmaceutical composition is administered topically.

30

          48. The method according to any one of claims 22-45, wherein said pharmaceutical composition is administered intravenously.